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# ENGINEERING SERVICES FOR RURAL ROADS REHABILITATION CONTRACT NO: EDH-I-00-08-00023

## MONTHLY PROGRESS REPORT – JULY 2015

12 August 2015

# ENGINEERING SERVICES FOR RURAL ROAD REHABILITATION (ES3R) CONTRACT NO. EDH-I-00-08-00023

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12 August 2015

The views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government. This report was prepared for the U.S. Agency for International Development. It was prepared by CDM International, Engineering Services Rural Roads Rehabilitation (ES3R)

## Acronyms

A & E	Architect and Engineer
BOQ	Bills of Quantity
COP	Chief of Party
COR	Contracting Officer Representative
EMMP	Environmental Mitigation and Monitoring Plan
ES	Environmental Specialist
ESMMP	Environmental & Social Mitigation & Monitoring Plan
ES3R	Engineering Services for Rural Roads Rehabilitation
ETL	Engineering Team Leader
FED	Food and Enterprise Development
FTF	Feed the Future
FTL	Field Team Leader
F2M	Farm to Market
F2MRR	Farm to Market Road Rehabilitation
GIS	Geographic Information System
GOL	Government of Liberia
LESSP	Liberia Energy Sector Support Project
LMWP	Liberia Municipal Water Project
MOF	Ministry of Finance
MPEA	Ministry of Planning and Economic Affairs
MPW	Ministry of Public Works
OCA	Organizational Capacity Assessment
PIRS	Performance Indicator Results Sheet
RE	Resident Engineer
SI	Site Inspector
USAID	United States Agency for International Development

# **ENGINEERING SERVICES FOR RURAL ROADS REHABILITATION (ES3R)**

## **MONTHLY PROGRESS REPORT JULY 2015**

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## **1. SUMMARY PROJECT DESCRIPTION**

## **1.1 Introduction**

The U. S. Agency for International Development's (USAID) 'Engineering Services for Rural Roads Rehabilitation (ES3R)' was awarded to Camp Dresser McKee International (CDM) under the following USAID contract number: EDH-I-00-08-00023 and task order AID-669-TO-13-00002 which records the period of performance as 8 October 2013 to 20 October 2015.

Liberia's Farm to Market Rural Roads (F2MRR) activity is allied to the objectives of the Feed the Future (FTF) initiative, which is a U.S. government initiative, which aims to address the root causes of global hunger by sustainably increasing agricultural productivity. F2MRR will provide infrastructure investment in the rehabilitation of rural farm-to-market roads to support the following:

- USAID /Liberia FTF program Food and Enterprise Development (FED),
- Capacity development for routine maintenance systems within the Government of Liberia (GOL),
- Capacity development of Ministry of Public Works (MPW) rural roads engineers and local A & E firms,
- Development of alternative low volume road pavement pilot projects, standards and design specifications.

## **1.2 Objectives**

Within F2MRR, ES3R will be an implementing mechanism which will undertake the following objectives:

### **Objective 1:**

Provide construction oversight for three (3) local contracts for the rehabilitation of a total of 83.5 kilometers farm-to-market roads in Bong, Lofa, and Nimba counties from 2013 to 2015.

### **Objective 2:**

Produce engineering designs and construction documents for the 450 kilometers farm-to-market roads in Bong, Lofa, Nimba, and Grand Bassa counties to be rehabilitated in 2015 to 2018.

### **Objective 3:**

Training and pre-qualification of five (5) local architect-engineer firms capable of providing oversight for road rehabilitation activities by 2015.

This monthly progress report presented in respect of the project covers the progress of the works for the period from 1 May 2015 to 31 May 2015. In addition, the report details the status and approach to project challenges and presents an outline schedule for the forthcoming month.

# 1. JULY 2015 OVERVIEW

## Preamble

During this reporting period, the ES3R team was engaged in field surveys, interventions, and other geotechnical and hydrology data collection in preparation for road and culvert design. Construction oversight activities in the three Counties continued to be carried out by the team, along with capacity building activities in the planning of on-the job training to the A&E engineers.

## 2.1 July 2015 Highlights Summary

The table below provides a summary of the Project highlights:

Date	Description	Comment
<b>July 6, 13, 20 27, 2015</b>	Submittal of weekly updates	To USAID Liberia
<b>July 10, 2015</b>	Arrival of Mr. Javed Sultan to replace COP during personal holiday time	To USAID Liberia
<b>July 12, 2015</b>	Meeting with MPW Deputy Minister Jackson Paye on road design at Nimba County	Deputy MPW & ES3R team
<b>July 14, 2015</b>	Submittal of Quarterly Report for April-June	To USAID/Liberia
<b>Jul 16, 2015</b>	Project site meeting	USAID COR
<b>July 16, 2015</b>	Inauguration of Bong County road links in Phase –I	Deputy USAID Mission Director-
<b>July 17, 2015</b>	COP vacation leave commenced and demobilization of the ETL	To USAID/Liberia
<b>July 17, 2015</b>	Approval of Contract Modification 4	From USAID, to CDM
<b>July 28, 2015</b>	Return of COP from leave to Monrovia County	ES3R Team
<b>July 1 thru 2, 2015</b>	Monthly site inspection and progress meetings in the Counties	USAID COR, ES3R team and contractor along with local MPW

## **2.2 Details of Highlights**

### **2.2.1 Project Deliverables and Documentation**

#### **Monthly Progress Report**

The last monthly report submitted was for the month of May 2015.

#### **The main contains of the report are:**

- Highlights Summary
- Details of Highlights
- Progress Meetings with USAID
- Field Visits to Counties Sites
- Project Deliverables and Documentation
- Design of Bridgeworks
- Revised Work Plan
- Objective 1 – Construction Oversight
- Objective 2 – Design and Contract Documents
- Objective 3 – Training and Capacity Building
- Performance Management Plan – PIRS

#### **Letters / E mails from USAID/Liberia**

The following communications addressed to the ES3R Project from USAID were received during the reporting period:

- On July 9, 2015: USAID COR requested the ES3R to review 21<sup>st</sup> Century Contractor's IPC.
- July 10, 2015: Email from USAID COR informing the ES3R team the inauguration of completed road links at Bong County to take place on July 16.
- July 13, 2015: Email from USAID COR requesting the ES3R Team to confirm the proposed list of guests for the inauguration ceremony which would be attended by the US Ambassador.



- July 13, 2015: USAID COR email addressed to the COP on the change of timing for Bong County inauguration to 10:00 am.
- July 15, 2015: USAID COR requested ES3R to attend the suggestion from MPW Deputy Minister on surveying of road link that actually goes up to Yourpea (1) called Yourpea Old town in Nimba County
- July 17, 2015: USAID COR approved the insertion of the Indicators proposed by LMEP which are to be entered in an annual basis

## 2. PROJECT OBJECTIVES PROGRESS

### 3.1 Team Structure

The field based teams have adopted the revised structure illustrated in the Y2 Work-plan is as follows:

#### **Team 1**

Responsible for road and pipe culvert design in the Counties of Lofa and Nimba in addition to construction oversight in Lofa.

Field Team Leader: Geoffrey Kibisi; responsible for coordinating and managing field surveys, construction oversight and national staff mentoring.

Resident/Design Engineer: Roosevelt Ballah; responsible for field survey activities.

Inspector Engineer: George OC Kaicora; responsible for road construction oversight.

Surveyor: provided by Geo Surv; responsible for topographic survey in support of surveys #1 and 2.

#### **Team 2**

Responsible for road and pipe culvert design in the Counties of Grand Bassa and Bong in addition to construction oversight in Bong County.

Field Team Leader: Frederick Were- Higenyi; responsible for Grand Bassa/Bong Team. Dr Were-Higenyi has been accepted as replacement of James Clarke in the post of Engineering Team Leader by USAID. It is proposed as per the Inception report the promotion of the Resident Engineer, Richard Freeman to Field Team Leader.

Resident/Design Engineer: Mr. Jusu is in charge of the field survey and geotechnical/hydrology investigation

Assistant Engineer (Staff from MPW); position for a Feeder Road Engineer from the Ministry of Public Works.

Topographic Survey Team: Geo Surv; responsible for topographic survey in support of surveys 1 & 2 and bridges.

### **Team 3**

Box Culvert Design, Nimba, Grand Bassa, Lofa and Bong as well as construction oversight in Nimba County.

Field Team Leader: Jackson Kirungi; responsible for coordination of topographic survey, hydraulic and structural assessments, location of structure, materials investigation and construction procedures.

Resident/Design Engineer: James Appleton; responsible for topographic survey and supervision of materials investigation.

Assistant Engineer: (Staff from MPW); position for a Feeder Road Engineer from the Ministry of Public Works to be mobilize in first week of August.

### **Team 4**

Bridge design Team, for Nimba, Grand Bassa, Lofa, and Bong bridges.

Team mobilization is scheduled to take place on 1 August 2015

Many key activities of the Bridge Team require low level flows in watercourses to be bridged.

## 3.2 Objective 1 – Construction Oversight

### 3.2.1 General

All construction Contractors received contract modifications up to the end of this reporting period. Westwood Inc. and 21<sup>st</sup> Century initiated preliminary activities on the expanded scope of works while SSF has been handed over the phase II road links for construction.

ES3R requested additional resources from USAID in its proposed contract modification 4 which has been now approved. Requested additional resources are in support of the extended scope in construction oversight. The modification was executed by USAID in current reporting period with aforementioned resources being implement concurrently.

Work activities during the reporting period focused on remaining work contracts within the Contractor's original scope and new work from the Phase II road links, especially in Bong and Nimba counties.

The below table describes the status of each County where construction is on-going:

Description	Westwood Corp: BONG	SSF: LOFA	21 <sup>st</sup> Century: NIMBA
Contract Award	22 Jan 2014	27 Jan 2014	22 Jan 2014
Modification	7 April 2015	26 May 2015	7 April 2015
Contract Period; days initial scope comp. Maintenance and defects liability	16 months 8 months	16 months 8 months	16 months 8 months
Additional scope – to complete Maintenance and defects liability	12 months 8 months		15 months 8 months
Extension of time due to EVD		3 months	
Time Elapsed Original scope (end July 2015)	113%	Completed	113%
Additional scope	25%	20	25%

Comp. date for construction: initial scope	22 May 2015	27 August 2015	22 May 2015
Comp. date for construction additional works	6 April 2016		6 April 2016
Overall Assessed Completion, Original scope	91%	Completed	91%
Additional scope	22%		8%
Total Contract Value, Original scope	\$1,895,141.86	\$592,384	\$843,228.25
Additional scope	<u>\$1,861,722.41</u>		<u>\$2,183,507</u>
Total	\$3,756,864.27		\$3,026,286
Value of works certified as of July 2015, USD	\$1,600,162	\$578,706	\$689,601
Additional scope	\$0	0	\$159,174

### 3.2.2 Bong County

Contract and modification have been awarded to Westwood Corp. Inc.

Construction of three roads totaling 49.6 km is ongoing under the original scope (Phase –I). The contractor's performance lower than anticipated in the reporting month due to the seasonal rains.

**Phase I** road links is shown below.

1.	Tolomai - Leleh – Palala	29.9 Km
2.	Gbenequelleh – Janyea	10.5 Km
3.	Gbenequelleh - Duita to Molly Town	9.2 Km
<b>TOTAL</b>		<b>49.6 Km</b>

**Phase II** road links and contract data is shown below.

1.	Taylorta - Marlonta to Yandewoin	14.1 Km
2.	Gbondoi - Gbarnla Road	17.5 Km
<b>TOTAL</b>		<b>31.6 Km</b>

Inauguration by USAID, MPW and County representatives of the completed road links under Phase I took place on 16 July, 2015 at Palala in Bong County.

Since the Senior Field Team Leader was accepted by the USAID to replace James Clarke in the post of Engineering Team Leader, construction oversight has been carried out by the ES3R team in the County led by the acting Field Team Leader, Richard Freeman, who is proposed for promotion.

Continuous monitoring of the contractor has taken place via the Site Inspector and with weekly visit from the FTL.

The physical progress for the original scope by end of the reporting period stands at: Preparatory and clearing works - 49.6 km (100%); Drainage and structures (pipe and box culverts) – 100%; gravelling - 98%; embankments – 90%; grouted stone pitching – 48%; and scour checks – 33%.

The additional scope physical progress stands at: Setting out - 1.2 km (4%); and site clearing – 12.8 km (41%). It is noted that the Contractor is currently behind on his work plan. The contract period for the original scope finished 22<sup>nd</sup> May.

Given the work load required to complete and the resources available on site, it is anticipated that the Contractor cannot complete the works within the allotted time.

### 3.2.3 Lofa

The Phase I road links and contract data is shown below.

1.	Barkedu-Jamulor-Moibadu	8.3 km
2.	Bitijama	3.6 km
3.	Galamai	1.7 km
<b>Total</b>		<b>13.6 km</b>

Phase II road links is shown below.

1.	John's Town-Bulor	15.0 km
<b>TOTAL</b>		<b>15.0 Km</b>

Contractor has started works in Modification (Phase 2) in clearing and grabbing activities, besides de installation of workshop and living quarters.

Contract and modification was awarded to SSF construction contractor. Substantial completion inspection of the original scope of work was issued to the contractor who is addressing the snag list and carrying out maintenance of the rehabilitated roads.

### 3.2.3 Nimba County

Contract and modification have been awarded to 21<sup>st</sup> Century Corporation Inc.

**The Phase I** road links is shown below.

1.	Bahn-Payee-Zuoplay	14.9 Km
2.	Dwonwea-Zoe Lappa	4.1 Km
3.	Duanpea	2.5 Km
<b>TOTAL</b>		<b>21.5 Km</b>

**Phase II** road links is shown below.

1.	Gogoin-Zuaplay junction – Doumpa-Zuaplay	22.1 Km
2.	Gaopa-Garwompa	5.8 Km
<b>TOTAL</b>		<b>27.9 Km</b>

During the month under review the works undertaken included the following:

#### **Phase -I roads**

- Repair of defects (insufficient gravel thickness & camber) on Bahn - Payee Road.
- Routine maintenance works on completed sections and culvert locations.
- Completed concrete casting to Lee bridge abutments.

- Completed scour checks construction

### **Phase -II roads**

- Concrete culvert fabrication at Gogoin site
- Commenced concrete pipe culvert construction works on Gaopa – Garwompa road
- Site clearing on Gogoin – Zuaplay junction road.

The contractor reported that 113 hrs. (about 14 days) of working time was lost due to bad weather.

### **Construction oversight summary:**

Bong County: Total number of links (Phase I and II): 81.2 KM

Nimba County: Total number of links (Phase I and II): 49.4 KM

Lofa County: Total number of links (Phase I and II): 28.6 KM

## **3.3 Objective 2 – Design of Prioritized Road Links**

### **General:**

Section 3.1 indicates the proposed team structure for delivery of outputs on this component. Outputs for the design team are listed below:

### **Field Survey Details:**

Field surveys are composed of the following components:

1. Community sensitization – District Commissioners, Paramount Chiefs and traditional leaders of communities along road link.
2. Chaining of road links.



3. Current land use within road corridor– providing type/density of clearance required and presence of cash crops within road corridor.
4. Culvert location, sizing, identification of inlet and outlet structures and length/nature of outlet channel (includes topographic survey).
5. Carriageway defect identification and selection of remedial interventions.
6. Selection of Geometric cross section – a function of traffic characteristics and topography either side of the road corridor.
7. Topographic survey along road link centerline and selection of appropriate longitudinal storm drainage interventions.
8. Road Inventory location and description of existing road assets, villages, schools etc.
9. Environmental and social aspects.

#### **Team 1: Road works Lofa and Nimba:**

Roads Surveyed up to the end of this reporting period: 96 km.

It is noted that Konia-Zigida road for the road link was suspended and advised by USAID to replace for the ranked number 10 (Jamulor-Kenela-Korleh road, 7.6 km) in the Lofa prioritized list.

Similarly, from the Nimba prioritized list, 6 short road links were suspended and replaced with Graie-Toweh Town-Yourpea 2-Yourpea 1 road (46 km).

#### **Team 2: Road Works Bong and Grand Bassa**

Team 2 is supported by a surveying agency, Geo-Surv for field survey components requiring topographic support.

Roads Surveyed up to this reporting period is: 139.13 km in Grand Bassa and 57.76 km in Bong. It is noted that all project roads in the two counties have been surveyed.

Quality control checks were performed on data provided by GeoSurv for road links and errors were accordingly corrected.

Also, survey for potential wearing course quality borrow pits which was not done in Grand Bassa is planned for September.

### **Team 3: Box Culverts, Lofa, Nimba, Bong and Grand Bassa**

Box Culvert surveys include collection of data for hydrology of river and hydraulic design of box culvert apertures.

Box Culverts surveyed during reporting period: 9 locations

Total to date = 36.

### **Team 4, Bridge Design**

Mobilization of team members initiated for anticipated design activities in next reporting month.

### **Summary:**

The prioritized road links in the four counties subject to design have been surveyed summing to a total of 393.39 km.

The road links and details are listed below:

<b><i>Bong County</i></b>		
1.	Foequelleh-Morgan	2.20 km
2.	Foequelleh-Menequah-Yowee	13.35 km
3.	Felela-Jarwuta	9.13 km
4.	Wensue-Kpai	8.78 km
5.	Sinyea-Kayata	13.3 km
6.	Bassa Town-Veleyan-Molonakpaiga	11.0 km
<b>Total</b>		<b>57.76 Km</b>

**Nimba County**

1.	Garwompa-Nyonkiayee	22.0 km
2.	Kpai-CNC Junction (Zao)	10.0 km
3.	Boyee Junction-Goekorpa	13.0 km
4.	Graie-Toweh Town-Yourpea 2	46.0 km
<b>TOTAL</b>		<b>91.0 km</b>

**Lofa County**

1.	John's Town Tusu	10.0 km
2.	Koiba City-Koilahun-Bolahun	9.7 km
3.	Checkpoint-Bassamolahun-Ngorkohun	7.2 km
4.	FoyaTown-Sandia	15.2 km
5.	Foya Town-Sangai-Kelima Pombor	8.2 km
6.	Konia-Ziggida	11.8 km
7.	Zelemai-Womai	22.2 km
8.	Zorzor-Yeala Boarder	6.9 km
9.	Zorzor-Kpaiyea-Gbarnway	14.3 km
<b>TOTAL</b>		<b>105.5m</b>

**Grand Bassa County**

1.	Ben Luogan-Kor	2.48 km
2.	Blewein-Doewein-Sarwain	9.58 km
3.	Compound 1-Little Bassa-Vermah	21.82 km
4.	Compound 1-Doezoh	0.85 km
5.	Compound 2-Zahn	18.80 km
6.	Garpu-Behn	6.30 km
7.	James Hennry-Kardor	11.95 km
8.	Karsuah-Newcess Beach	10.20 km
9.	Siah-Weiker	3.20 km
10	Tain-Frank	2.13 km
11	Waka-Johnny Tutu	7.28 km
12	Waka-Compound 2	20.59 km
13	Yonbehn-Grand Kola	23.95 km
<b>TOTAL</b>		<b>139.13 Km</b>

### **3.4 Objective 3 – Capacity Building**

#### **MPW Feeder Road Engineers:**

MPW Feeder Road engineers as supporting staff are approved by the Ministry of Public Works. It is anticipated that the MPW engineers will join ES3R in first week of August to the three active construction oversight counties.

#### **A & E Firm Trainees:**

The A & E firms' trainees were mobilized since late May and immediately exposed to the different capacities.

Evaluation for the first month (June) was conducted; results appear to be very positive as there is a great spirits in participation by each one of the trainees who have been allotted in all the activities of the project such as field topographic surveys, soil investigation, hydrology data collection, etc. In addition, construction oversight and culvert design activities have been some of the subjects where more enthusiasm has been demonstrated.

The A&E firms' owners are also conducting separate evaluation of their employees and providing information to the FTLs as feedback.

### 3. PROJECT CHALLENGES

The following items have been encountered recently which are continuing and pose challenges to the ES3R team and Project:

Challenge / Issue	Mitigation / Resolution
<b>Bridge Design - time to complete such a design is a constrain</b>	Geotechnical assessment will be done from some distance to the real abutment construction. Hydraulics will be determined utilizing some historical data of maximum flood levels
<b>Rainy season</b>	Construction activities and oversight to take place intermittently

## **5. OUTLINE SCHEDULE**

### **5.1 Outline Schedule for August 2015**

#### **Preamble**

The Year 2 Work Plan was submitted to USAID on 27 February. The strategy remains the continuance of the construction oversight for the original 84 km (plus an additional 75 km from modification four), design of 380 km (updated to 393km) road links and capacity building of the A&E Firms. The additional 18 km may be a subject of cost variation which will be analyzed and proposed in upcoming reports.

Since field survey of all project roads in the four counties were completed by the end of July, the ES3R team will focus on entering the survey data and commence designs. The Bridge Design Team will be fully mobilized and commence field surveys and design of bridges in first week of August.

The four (4) MPW Feeder Roads Engineers seconded to the project are expected to be mobilized to start work in first week of August.

#### **Objective 1 – Construction Oversight**

ES3R field staff will continue to provide construction oversight to the on-going three contracts in Bong, Lofa and Nimba in Phase –II (plus any remaining Phase 1 elements).

Substantial completion for Phase I road links in Lofa was achieved during the reporting period and is under review. It is planned that Bong and Nimba Phase I road links will also attain substantial completion certificates by the end of August. Oversight of the additional 74 km is provided by the ES3R team and will continue

through the end of December 2015 unless otherwise modified by USAID.

## **Objective 2 – Design and Contract Documents**

Team 1: Lofa and Nimba will complete data entry of 95 km of surveyed road links and commence designs and tender documentation.

Team 2: Bong and Grand Bassa will complete data entry of 139.13 km of surveyed road links and commence designs and tender documentation.

Team 3: Box Culverts Bong Grand Bassa and Nimba and completed survey of all box culverts and will commence design and tender documentation.

Team 4: Bridge Team will be fully mobilized and undertake field site surveys and geotechnical investigations for design of bridges.

## **Objective 3 – Capacity Building**

Training and capacity building of the five Engineers from the A&E Firms is to continue. On the job trainees are being guided in providing construction oversight for the three active contracts, data entry and design of roads. In addition they are exposed to continuation of field survey works in preparation for road and culverts design.

A second assessment of their performance aimed to identify technical knowledge transfer will be conducted during August which will provide a feedback to all respective parties.

Two workshops have been scheduled from which an anticipated 10 persons will be in attendance at the director/manager level of the five AE firms. The first workshop will occur from 25 August thru 28 August. The second one is scheduled for 31 August thru 4 September. The topics to be covered are: Marketing strategies and proposals preparation.